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**FAX TRANSMITTAL**

March 25, 2002

TO: Lanna Mai, S.P.E. Group 3619 703/872-9326  
FROM: John W. Hathaway 206/624-9292  
RE: Conrad O. Gardner, Registration Number 22462 Pages 233  
[INC. THIS PAGE]

Dear Ms. Mai:

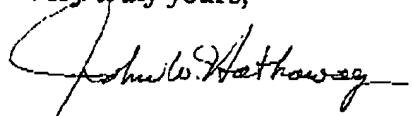
This law firm is counsel to Conrad O. Gardner, whose registration number is 22462. Mr. Gardner has requested that we fax you the Reconstructed File for Application No. 08/896,514. The file consists of 233 pages. Each page has its number handwritten on the lower right corner.

We are faxing the file to you in 25 page increments to increase the likelihood that most of the file will reach you if a transmission problem should occur.

Please notify this firm immediately if you have not received all 233 pages or if any portion of the file is not legible.

Thank you for your cooperation.

Very truly yours,

  
John W. Hathaway

JWH/

powerful acceleration is provided while in the cruise mode when the speed of the vehicle is dropping” in the claim, viz. by operator depression of the throttle pedal to provide electric propulsion”.

The term “cruise mode” is defined throughout applicant’s specification including several pages of description, see e.g. page 4 beginning at line 29 through page 7, line 16 where cruise mode of operation is detailed and described in the preferred embodiment.

“fast and instant powerful acceleration when operating in the cruise mode” is accomplished by the operator quickly depressing the throttle pedal” finds basis and meaning e.g. at page 7, lines 19-24 where a fast pass is necessary to overtake another vehicle.

See also page 10 with reference to Figure 2. beginning at line 20 on where conditions occur during climbing a mountain pass at t=6 minutes where “instant powerful acceleration” becomes necessary through utilization of electric propulsion as claimed. See also page 13, line 15 relating to High Performance, High Torque Demand Situations. Claim 56

The Examiner in the Final Rejection raises the question “within a small range of speeds” is unclear as to whether vehicle speed or engine speed (rpm) is being referred to.

Claim 56 language is explicit viz. “a. operating the internal combustion engine within a small range of speeds about its most efficient operating speed from a power and pollutant output standpoint”. The phrase is self explanatory, it’s the engine and not the vehicle speed.

Claim 57

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In the Amendment after Final Rejection ( See Appendix A where the claim in final form appears it should be noted that antecedent basis for "cruise mode" has been provided.

Claim 58

In the Amendment after Final Rejection ( See Appendix A where the claim in final form appears) it should be noted that the internal combustion engine for the hybrid motor vehicle is defined as having a horsepower rating of approximately 20 to 30 % of the horsepower rating of an equivalent weight internal combustion only powered vehicle.

The hybrid motor vehicle defined in claim 58 is very specific in that horsepower rating is only 20 to 30% for the claimed hybrid compared to whatever the vehicle power would be for an internal combustion powered vehicle of equivalent weight.

Claim 60

Antecedent basis for the term "cruise mode" was provided in the Amendment after Final Rejection which was entered by Advisory Action ( See claim 60 in final form at Appendix A).

Claims 55, 56, & 59

Recitation of the term " fast charge-discharge battery" in the present hybrid vehicle was deemed vague and unclear.

Claim 55 in clause (a) as seen in Appendix A states in the method of operating the present hybrid vehicle, " a. rapidly capturing power from a continuously running low horsepower internal combustion engine to charge a fast charge-discharge battery without loss of said power" (See page 10, line 2 on). Fast charge-discharge batteries such as NiCd or NiMH are capable of rapid charging compared to lead acid batteries used in earlier electric powered vehicles which were slow charging, were of limited

range and required overnight charging. A fast charge-discharge battery such as a nickel cadmium (NiCd) exemplary of fast charge-discharge batteries was included in the language of Claim 56. A slow charging battery such as lead acid batteries would not be able to capture energy at a rapid rate without major loss of power from the low horsepower internal combustion engine when in the charging mode. See page 7, at line 8 where fast charge-discharge batteries are distinguished from lead acid batteries. See also page 8, beginning at line 26 where the importance of fast charge-discharge battery characteristics in the present system is further described.

ISSUES (Cont.)

2. Whether claim 55 is anticipated by Kenyon (U.S.P. 4,438,342) under 35 USC 102(b) Kenyon, for sudden acceleration provides a switching mode where battery and alternator are in series electrically and connected across the motor 54 (Column 4, line 17). Parallel feed is changed to series feed (column 4, line 27). Kenyon does not specify a cruise mode but merely references parallel and series operation. Claim 55 in response to the depression of the throttle pedal provides "electric propulsion while in the cruise mode when vehicle speed is dropping", a specific transition is not shown in Kenyon within the meaning of 35 USC 102(b).

Further, no disclosure in Kenyon is found with respect to clause a. of Claim 55 relating to a charging system utilizing a fast charge-discharge battery receiving power from an internal combustion engine with optimum power transfer.

3. Whether claim 55 is anticipated by Kim (U.S.P. 4,438,342) under 35 USC 102(b). Kim is simply a hybrid of series configuration with engine 1 driving a generator to propulsion motors with speed of propulsion simply controlled by accelerator control

of the engine. Claim 55 calls for operator depression of the throttle pedal to provide electric propulsion to provide instant acceleration " while in the cruise mode where the speed of the vehicle is dropping". Kim does not disclose throttle control in the claimed cruise mode condition.

4. Whether claims 55-60 are anticipated by Ellers (U.S.P. 4,923,025) under 35USC 112 b Ellers provides an electric motor driving the hybrid in a low speed range and an internal combustion engine driving the vehicle at a predetermined and selected higher speed range such as 55 mph. The internal combustion engine drives a generator "only when battery voltage is below 5.25 volts per 6 volt battery (col 2, lines 44-50). At 55 mph, the engine 2 is started (col 4, lines 1-7). The Ellers system requires the vehicle to " be driven approximately 30% of its mileage over 55 mph (on ICE) the batteries would never need charging from an outside source" (col 4, line 67 to col 5, line 2.

As a consequence the Ellers vehicle is unsuitable for city driving alone where vehicle speeds exceeding 55 mph are not reached 30 % of the time.

In contrast, claims 55-60 are specifically drawn to a system where cruise mode conditions, e.g. claim 57 defines 2 conditions for utilizing the internal combustion engine in the cruise mode, not a predetermined speed alone ( 55 mph as in Ellers). The electric motor in the cruise mode as called for in claim 60 is responsive to vehicle operating parameters and not the single parameter of engine speed as Ellers.

Ellers operates the internal combustion engine at speeds above 55 mph e.g. at 60 mph 70 mph etc. in contrast to the invention as defined in claim 56 where the internal combustion engine is maintained under controlled conditions ( including speed) for effective pollution control. Further, nothing in Ellers describes "utilization of the

internal combustion engine to charge a fast charge-discharge battery when the internal combustion engine is not employed to drive the motor vehicle "thereby providing extended range as specified in claim 55.

Claim 58 specifies a method of operating a hybrid motor vehicle including 2 steps, neither of which is in any manner described by Ellers viz. (a) a limited range of horsepower for the internal combustion engine, not the amount of horsepower which increases above 55 mph to whatever speed the operator desires as Ellers and (b) specific operating parameters for the engine in the cruise mode. Features (a) and (b) are not shown in Ellers and therefore the claim is allowable within the meaning of 35 USC 102 b. A fast charge-discharge battery is not mentioned in Ellers as powering the electric motor on throttle demand nor is "power transferred into electric power in a fast charge-discharge battery when the internal combustion engine continues to run" as called for in claim 59.

As seen in the preceding, claims 55-60 are not met by Ellers within the meaning of 35 USC 112(b).

#### ISSUES (Cont.)

6. Whether claims 34, 35, 37 & 50-54 are unpatentable over Ellers ( U.S.P. 4,923,025)

under 35 USC 103 (a)

#### Claim 34

The Examiner considers ( in paragraph 7 of the Final Rejection) that Ellers provides a "cruise mode on condition" and a "cruise mode off condition" above and below 55 mph.

The cruise mode control circuit of claim 34 specifies preprogrammed operating conditions ( plural and not a single condition as predetermined speed in Ellers). The Examiner states " The internal combustion engine being a small engine with no throttle control, would operate at a constant speed for maximum efficiency and minimum pollution". This is contrary to Ellers because Ellers provides speeds above 55 mph utilizing throttle control. Claim 35 is dependent upon claim 34 and allowable as claim 34. Claims 37 and 40

The Examiner concludes on page 5 of the Final Rejection with respect to claim 37 and 40 That " It would have been obvious to program the control circuit of Ellers to always connect the engine to the generator during the cruise mode condition to maintain a fully charged battery. This conclusion of obviousness is erroneous for two reasons, first Ellers specifies the voltage level when the battery requires charging, and further there is no reason to " always connect the engine during cruise mode off condition to charge the battery in Ellers continuously" since this would be a large waste of engine power when the battery does not indicate a low voltage need in Ellers for charge.

#### Claim 50

The Examiner states with respect to claim 50: " With respect to claim 50, since the cruise mode is set only when the vehicle has reached a predetermined speed, it would have been obvious to activate the cruise mode only after a predetermined period of time in which rapidly shifting power and speed demands have not occurred in order to provide a consistent speed for the cruise mode". The " cruise mode" of Ellers is fixed at a predetermined speed and is not dependent as claimed in claim 50 upon a plurality of conditions nowhere taught or suggested by Ellers within the meaning of 35 USC 103 a.

#### Claim 51

Ellers charges the battery when the charged state of the battery is low as pointed out by the Examiner on Page 6 of the Final Rejection, a common practice in the motor vehicle art. Claim 51 specifies a charging system where the electric motor is powering the vehicle at lower speeds and the engine is continuing to operate supplying power to the battery to prevent its discharge contrary to Ellers where the engine is used when necessary to charge at a predetermined low voltage level of the battery.

#### Claim 52

Claim 52 is dependent from claim 50 and allowable at least for the same reasons as claim 50 while further definitive of cruise mode operating parameters.

#### Claim 53

Claim 53 is believed identical in format to the claim indicated as allowable in an interview held with the Examiner on November 10, 1998 ( See APPENDIX B ). Claim 53 defines cruise mode operating conditions nowhere shown, taught or suggested by Ellers and is believed allowable within the meaning of 35 USC 103 (a).

Further regarding the patentability of claims 34, 35, 37, 40, and 54 over Ellers under 35 USC 103 (a), applicant introduces the AFFIDAVIT OF PHILIP C. MALTE UNDER RULE 132 attached as APPENDIX C.

6. Whether Claim 36 is unpatentable over Ellers ( U.S.P. 4,923,025) in view of Fields et al ( U.S.P. 4,351,405) under 35 USC 103 (a)

#### Claim 36

Claim 36 is dependent from claim 34 and believed allowable as claim 34.

7. Whether claims 38, 39 & 41 are unpatentable over Ellers ( U.S.P. 4,293,025) in



view of Miyake et al (U.S.P. 5,048,374) under 35 USC 103 (a).

Claims 38, 39 & 41 are dependent from claim 37, therefore claims 38, 39 & 41 contain all the limitations of claim 37 and therefore the evaluation of these claims should consider claim 37 limitations also.

Claim 38

Control means (30) of claim 38 is not an automatic transmission with a plurality of shiftable speed stages, the automatic transmission being capable of shifting from an operating speed stage to another operating speed stage and capable of maintaining an operating speed stage when in normal condition ( See preamble of claim 1 of Miyake et al ). Claim 38 relates to a period set for transfer and is not concerned with maintaining an operating speed stage.

Claim 39 depends from claim 38 and defines a period. There is no period set in the automatic transmission of Miyake et al who is concerned with shifting through operating speed stages while maintaining an operating speed stage.

Claim 41 is dependent from claim 40 and defines a running state as a vehicle speed of about 40 mph. The Examiner states at page 7, lines 7-10 of the Final Rejection:

" With respect to claims 41 and 45, it would have been further obvious to set the speed at which the combustion engine is activated to that of 40 mph in order to maintain a higher battery charge, thereby permitting extended use of the electric motor at lower speeds".

This is incorrect as the claim is dependent from claim 40 which is in turn dependent From claim 37 which relates to transfer of engine power from wheels to a generator and not the actuation of the combustion engine at 40 mph. The second portion of the

above sentence stating "thereby permitting extended use of the electric motor at lower speeds" is an adoption of the teachings of applicants specification where combustion engine utilization in conjunction with a fast charge-discharge battery e.g. a nickel cadmium battery during cruise mode off condition permits "extended use of electric motor at lower speeds" viz. extends the range beyond the teachings of the reference hybrid systems of the prior art of record.

8. Whether claims 46-49 are unpatentable over Kenyon ( U.S.P. 4,438,342) in view of Lynch et al ( U.S.P.4,165,795) under 35 USC 103 (a).

Claim 46

The Examiner states in the Final Rejection ( under item 10 beginning at page 7) that:

"It would have been obvious to provide the hybrid vehicle of Kenyon with a transmission between the clutch and driven wheels as taught by Lynch et al in order to provide a more efficient use of engine power".

Kenyon specifies due to features of his invention, "a gear ratio of 1:1 may be maintained from engine 10 to differential 14 which assures maximum efficiency for the power train ( See col 3, lines 32-35). Accordingly it is not understood why the transmission of Lynch et al would be an "obvious substitution in Kenyon in order to provide a more efficient use of engine power" as stated by the Examiner. Switches are used in Kenyon and neither Kenyon nor Lynch et al show the logic control circuit functioning during disengagement of the clutch called for in claim 46. Claims 47 and 48 depend from claim 46 and are deemed patentable as claim 46.

In view of the preceding, applicant respectfully requests the Board of Appeals to find

the appealed claims allowable.

Respectfully submitted,



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